

REMARKS

Status of the Claims

Claims 1-19 are now present in this application. Claims 1, 2, 9, 11, and 12 are independent.

No additional claims have been canceled by this amendment. Claims 17-19 have been added, and claims 1, 2, 9, 11 and 12 have been amended. Reconsideration of this application, as amended, is respectfully requested.

Rejection Under 35 U.S.C. § 101

Claim 12 stands rejected under 35 U.S.C. § 101. This rejection is respectfully traversed.

The Examiner states that the "computer-readable medium" of claim 12 is not statutory subject matter because it can allegedly be construed to include transitory propagating signals.

Claim 12 is amended, consistent with the February 23, 2010 Official Gazette Notice titled "Subject Matter Eligibility of Computer Readable Media", to recite "a non-transitory computer-readable medium". This amendment is also consistent with at least one embodiment disclosed in the specification.

It is therefore respectfully submitted that claim 12, as amended, recites statutory subject matter. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejections under 35 U.S.C. §103

a) Claims 1, 2, and 8-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,74927 issued to Kato (hereinafter "Kato") in view of the U.S. Pre-Grant Publication No. 2002/0191694 of Ohyama (hereinafter "Ohyama") (OA, p. 3.)

b) Claims 3 and 13 stand rejected under § 103(a) as unpatentable over Kato in view of Ohyama and further in view of U.S. Patent No. 6,546,052 issued to Maeda et al. (hereinafter "Maeda"). (OA, p. 21.)

c) Claim 4 stands rejected under § 103(a) as unpatentable over Kato in view of Ohyama and in further view of the U.S. Pre-Grant Publication No. 2005/0175251 of Taketa et al. (hereinafter "Taketa"). (OA, p. 23.)

d) Claim 5 stands rejected under § 103(a) as unpatentable over Kato in view of Ohyama and Taketa and further in view of U.S. Pre-Grant Publication No. 2005/0146610 of Creamer et al. (hereinafter "Creamer"). (OA, p. 25.)

e) Claim 7 stands rejected under § 103(a) as unpatentable over Kato in view of Ohyama and in further view of U.S. Patent No. 7,068,849 issued to Zandi (hereinafter "Zandi"). (OA, p. 27.)

f) Claim 14 stands rejected under § 103(a) as unpatentable over Kato in view of Ohyama and Maeda and further in view of the U.S. Pre-Grant Publication No. 2002/0141496 of Yang (hereinafter "Yang"). (OA, p. 29.)

g) Claims 15-16 stand rejected under § 103(a) as unpatentable over Kato in view of Ohyama and Maeda and further in view of U.S. Patent Publication No. 2005/0074062 of Sung (hereinafter "Sung"). (OA, p. 31.)

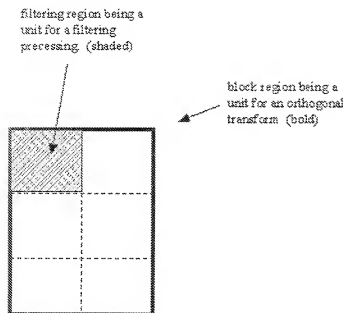
These rejections are respectfully traversed.

The applied art does not disclose or make obvious every feature of the independent claims. For example, Ohyama does not, as asserted in the Office Action, disclose filtering regions and block regions "wherein each of said filtering regions is a cluster which is included in and is smaller than said block region" as recited in each independent claim.

Ohyama describes that an image is divided into "small blocks" each having 2 pixels \times 2 pixels, and a discrete wavelet transform is performed for each of the small blocks to determine whether or not each of the small blocks is an important region. See, e.g., ¶¶[0055]-[0056]. Ohyama also describes that, depending on whether or not each of the small blocks is an important region, filtering processing based on a low pass filter is performed for each of the small blocks. See, e.g., ¶[0070]. However, Ohyama does not describe that the filtering region ("small block"), which is a unit for the filtering processing, is set smaller than a block region ("small block"), which is a unit for performing a frequency transform.

The independent claims (1, 2, 9, 11, and 12) of the present application recite filtering regions each of which is "included in and is smaller than said block region". The claimed embodiment employs the principle that, in the case where the block region and the filtering region partially share a boundary, an AC coefficient obtained by an orthogonal transform is suppressed. For this reason, as illustrated below, even in the case where the filtering region is

smaller than the block region, a compression rate can be improved by the suppression of the AC coefficient.



On the other hand, Ohyama does not describe or suggest that the filtering region (which is a unit for the filtering processing) is set smaller than the block region (which is a unit for performing a frequency transform). In the configuration disclosed by Ohyama "the block size is made in accordance with a unit size on the (2, 2) wavelet transform". ¶[0067]. "[I]mage transform is made in a unit of $n/p \times m/r$ small block." ¶[0068]. "[A] high-pass filter 104a and a low-pass filter 104b are applied on the image data in the above-mentioned small block" ¶[0070]. It is determined by the discrete wavelet transform whether or not each of the block regions is an important region, and on the basis of a result of the determination, a filtering processing based on a low pass filter is performed. In other words, in the configuration of Ohyama, it is determined whether or not each of the block regions is an important region, and the filtering region is matched with the block region in size, and therefore the filtering region cannot be set smaller than the block region.

Kato, Maeda, Taketa, Creamer, Zandi, Yang, and Sung do not alone or in combination remedy this deficiency of Ohyama. Accordingly, the applied art does not disclose or make obvious every feature of the independent claims, nor, of course, the features of the present

independent claims. Withdrawal of the rejection, favorable reconsideration, and allowance are respectfully requested.

New Claims

Claims 17-19 have been added for the Examiner's consideration.

Claim 17, clarifies that the filtering processing is performed only on filtering regions that do not include an important region.

That is, in the present invention, the filtering processing is selectively performed on the filtering region that does not include an important region. Accordingly, a compression rate of an image is improved while an important region can be kept at high image quality.

As discussed above, Ohyama does not describe that the filtering region is set smaller than the block region. Also, in the configuration of Ohyama, it is determined whether or not each of the block regions is an important region, and therefore if the filtering region is smaller than the block region, it cannot be determined whether or not each of the filtering regions is an important region. For this reason, the filtering processing cannot be selectively performed on the filtering region not including an important region.

Claim 17 is thus submitted to be in condition for allowance for at least the same reasons as claim 2, from which it depends.

Claims 18-19 each clarify that the recited filter regions each partially share a boundary with said block region. Thus, an AC coefficient obtained by an orthogonal transform can be more effectively suppressed. It is respectfully submitted that the applied art of record does not disclose or make obvious the combination of features recited by claims 18-19.

Favorable consideration and allowance of new claims 17-19 are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

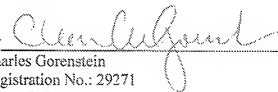
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact James C. Larsen, Registration No. 58565 at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: December 1, 2010

Respectfully submitted,

By



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